

REMARKS

Status of the Claims

- Claims 1-8 are pending in the Application after entry of this amendment.
- Claims 1-8 are rejected by Examiner.
- No amendments are made to the claims.

Claim Rejections Pursuant to 35 U.S.C. §102

Claims 1-8 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over B. Carpenter, et al. Connection of IPv6 Domains via IPv4 Clouds (Network Working Group), hereafter referred to as “Carpenter” in view of US Patent Application Publication No. 2001/0040895 to Templin. Applicants respectfully traverse the rejection.

The failure of an asserted combination to teach or suggest each and every feature of a claim remains fatal to an obviousness rejection under 35 U.S.C. § 103. Section 2143.03 of the MPEP requires the “consideration” of every claim feature in an obviousness determination. To render a claim unpatentable, however, the Office must do more than merely “consider” each and every feature for this claim. Instead, the asserted combination of the patents must also teach or suggest *each and every claim feature*. See *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974) (emphasis added) (to establish *prima facie* obviousness of a claimed invention, all the claim features must be taught or suggested by the prior art). Indeed, as the Board of Patent Appeals and Interferences has confirmed, a proper obviousness determination requires that an Examiner make “a searching comparison of the claimed invention - *including all its limitations* - with the teaching of the prior art.” See *In re Wada and Murphy*, Appeal 2007-3733, citing *In re Ochiai*, 71 F.3d 1565, 1572 (Fed. Cir. 1995) (emphasis in original). “If an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious” (MPEP §2143.03, citing *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)).

Independent Claim 1 provides a method for supporting a 6to4 tunneling protocol across a network address translation mechanism. The method includes receiving, from a first host located on a first network, an outbound IPv6 packet encapsulated into an IPv4 packet. The IPv4 packet comprises a IPv4 header with a private IPv4 source address of the first host. The outbound IPv6 packet comprises a IPv6 header with a 6to4 source address and the IPv6 header comprising an Interface ID value. The private IPv4 source address in the IPv4 header is translated into a public IPv4 source address. The translated packet is transmitted over an IPv4 network to a remote host. The method further comprises storing an association of the private IPv4 source address and the Interface ID value of the 6to4 source address for opposite address translation of inbound packets returned by the remote host. For the reasons presented below, it is respectfully submitted that Carpenter alone or in combination with Templin, fail to teach or suggest each feature of the present claimed arrangement.

Carpenter describes, in Section 5.1, page 9, that “[w]hen an outgoing packet reaches the 6to4 router, it is encapsulated as defined in Section 3, according to the additional sending rule defined in Section 5.3. Incoming packets are decapsulated according to the additional decapsulation rule defined in Section 5.3.” In Section 5.3 of Carpenter, decapsulation includes applying any security checks and removing the IPv4 header and submitting the packet to local IPv6 routing. However, the decapsulation rules described in sections 5.1 and 5.3 (and elsewhere) of Carpenter fail to teach or suggest “storing an association of the private IPv4 source address and the Interface ID value of the 6to4 source address for opposite address translation of inbound packets returned by the remote host” as in the present claimed arrangement.

The Office Action acknowledges that Carpenter fails to teach or suggest “storing an association of the private IPv4 source address and the Interface ID value of the 6to4 source address for opposite address translation of inbound packets returned by the remote host” as recited in claim 1. However, the Office Action asserts that Templin

in paragraph 255, lines 1 – 6 discloses the present claimed feature. Applicants respectfully disagree.

Templin describes a system facilitating IPv6-IPv4 compatibility wherein IPv6 islands are present in heterogeneous IPv4/IPv6 networks (see para. [0005]). Specifically, in paragraph [0225], Templin describes a compatibility address format. Therein, Templin states that “[t]o communicate across the subnet 10 with the heterogeneous IP infrastructure, the IP host 12 and the gateway 16 use an aggregatable, global, unicast addresses”. Templin defines these addresses as an “IPv6-IPv4 compatibility address”. The IPv6-IPv4 compatibility addresses enable IPv6 nodes to (1) forward IPv6 packets across native IPv6 routing infrastructure or (2) to automatically tunnel IPv6 packets over IPv4 routing infrastructure without requiring a pre-configured tunnel state. In Templin, a routing node 14 with an IPv6-IPv4 compatibility address can serve as a router for nodes 18 with native IPv6 addresses (i.e. IPv6 addresses that are not IPv6-IPv4 compatibility addresses) connected to the same link. In the instance where the node is a native IPv6 node, the IPv6-IPv4 routing node 14 can automatically tunnel messages across the IPv4 infrastructure of the subnet 10 to reach the gateway 16. However, the IPv6-IPv4 compatibility addresses described in Templin is not equivalent to a “6to4 source address” that is included in the IPv6 header in the present claimed arrangement. Unlike Templin, the claimed method advantageously uses 6to4 source addresses to facilitate communication between IPv6 sites or native IPv6 networks over an IPv4 network without explicit tunnel setup (Specification, page 2, lines 18 – 22). Templin fails to teach or suggest the use of 6to4 source addresses and instead uses a compatibility address format that is not equivalent to the present claimed 6to4 source addresses that are included within the IPv6 header in an outbound IPv6 packet.

Additionally, in paragraph [0251], Templin describes their mechanism for initiating a reverse network translation. Specifically, Templin describes transforming the IPv6-IPv4 compatibility address interface identifier 304 with embedded IPv4

address of the sending node into an anonymous ID for interdomain routing outside the subnet 10. Thus, the translation performed by Templin is done to prevent exposure of internal IPv4 addresses to domains outside the subnet. Templin, in paragraphs [0253] – [0255], further provides that the border gateway maintains a mapping identifier to the actual IPv4 address of the IPv4 node and that this identifier is not vulnerable to eavesdropping. However, this reverse network translation is described for globally unique IPv4 addresses which are not equivalent to the “private IPv4 source address” of the present claimed arrangement (*see* Templin, paragraphs [0242] and [0243] for the definition of globally unique IPv4 addresses). Moreover, in paragraphs [0258] – [0260], Templin provides that reverse network translation of non-globally unique IPv4 addresses is not required except for potentially protecting against eavesdropping but is performed in the manner described above. Therefore, Templin merely stores an association of IPv4 source addresses that are not private address and an identifier that is not vulnerable to eavesdropping for reverse address translation of packets. The anti-eavesdropping identifier being associated with an IPv4 source address is not equivalent to “storing an association of the **private IPv4 source address** and the interface ID value of the **6to4 source address** for opposite address translation of inbound packets returned by the remote host” as in the present claimed arrangement. Templin fails to teach or suggest using 6to4 addresses or an interface ID for a 6to4 address as in the present claimed method.

The Office Action asserts it would be obvious to combine the features of Templin with the system of Carpenter to allow devices on an IPv6 network to send packets to and receive packets from devices on an IPv4 network. Applicants respectfully disagree. In fact, it is respectfully submitted that the system described by Templin is structurally and functionally incompatible with the system described by Carpenter and thus could not be readily combined to produce an operative system without frustrating the functionality of the individual systems. Specifically, Templin provides that IPv4 addresses within a subnet are private and are only transmitted in their current private form or, alternatively, replaced by an identifier that is not

vulnerable to eavesdropping (see Templin, para. [0260]). This is in direct contrast with Carpenter which describes any private IPv4 address is replaced by a public IPv4 address in the IPv4 header prior to transmission of that packet. Thus, Templin teaches away from Carpenter because Templin fails to replace a private IPv4 source address with a public IPv4 source address and instead inserts an identifier to mask the private IPv4 address. Transmitting either the private IPv4 source address or an identifier for that source address as in Templin is not compatible with replacing a private IPv4 source address with a public IPv4 source address as required by Carpenter. Therefore, one skilled in the art would not seek to combine these two systems to produce an operable system.

Even if one were to combine the system of Templin with the system of Carpenter, the resulting system would neither teach nor suggest the features of the present claimed arrangement. The combination of Templin with Carpenter fails to enable opposite translation of inbound packets and support bidirectional communication in an X/Y NAT as stated on page 1 of the present specification. Specifically, Carpenter (with Templin) fails to teach or suggest “storing an association of the private IPv4 source address and the Interface ID value of the 6to4 source address for opposite address translation of inbound packets returned by the remote host” as recited in the claimed arrangement. Rather, the combined system would merely store an IPv4 source address and an identifier associated with that address that is not vulnerable to eavesdropping. Templin fails to teach or suggest the use of 6to4 addresses in any manner and thus cannot store the Interface ID value of the 6to4 source address. Furthermore, as acknowledged in the Office Action, Carpenter fails to teach or suggest the present claimed feature. Therefore, the combination of Templin with Carpenter fails to teach or suggest “storing an association of the private IPv4 source address and the Interface ID value of the 6to4 source address for opposite address translation of inbound packets returned by the remote host” as recited in claim 1. Consequently, withdrawal of the rejection of claim 1 is respectfully requested.

Claims 2 – 6 are dependent on claim 1 and are considered patentable for the reasons presented above with respect to claim 1 per MPEP §2143.03. Therefore, it is respectfully submitted that Carpenter (with Templin) fail to teach or suggest the features of claims 2 – 6. Consequently, withdrawal of the rejection of claims 2 – 6 is respectfully submitted.

Independent claim 7 includes similar features as those described above with respect to claim 1. Therefore, Applicants respectfully submit that independent claim 7 is patentable for the reasons presented above with respect to claim 1. Specifically, Carpenter (with Templin) fail to teach or suggest “an application for storing, for each outbound packet received from a host of an IPv6 network, the private IPv4 addresses and an Interface ID value included in a 6to4 source address of a host; and for updating a 6to4 destination address of an inbound packet with a stored private IPv4 address having same Interface ID as the 6to4 destination address” as recited in claim 7. Therefore, withdrawal of the rejection of claim 7 is respectfully requested.

Claim 8 is dependent on claim 7 and is considered patentable for the reasons presented above with respect to claim 7 per MPEP §2143.03. Therefore, it is respectfully submitted that Carpenter (with Templin) fail to teach or suggest the features of claim 8. Consequently, withdrawal of the rejection of claim 8 is respectfully submitted.

In view of the above remarks, it is respectfully submitted that the Office Action fails to make a prima facie case that the present claimed arrangement is obvious over Carpenter alone or in combination with Templin. Therefore, as the combination fails to teach or suggest each feature claimed in claims 1 - 8, it is respectfully submitted that this rejection is overcome and should be withdrawn.

Conclusion

Applicants respectfully submits that the pending claims patentably define over the cited art and respectfully requests reconsideration and withdrawal of the 35 U.S.C. §103 rejections of the pending claims.

Having fully addressed the Examiner's rejections, it is believed that, in view of the preceding amendments and remarks, this application stands in condition for allowance. Accordingly then, reconsideration and allowance are respectfully solicited.

No fee is believed due with this response. However, if there are any additional charges in connection with this requested amendment, the Examiner is authorized to charge Deposit Account No. 07-0832 therefore.

Respectfully submitted,
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